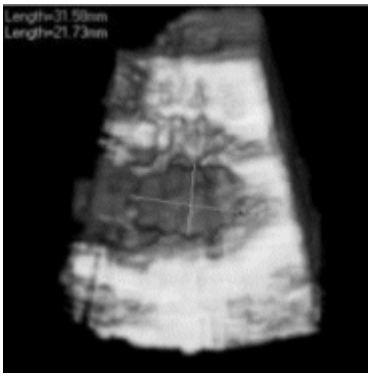
as compared to TEE . Freehand scanning is faster but similarly accurate as rotational scanning thus allowing for accelerated workflow without quality sacrifice.



1150-151 Patients Benefit From Intracardiac Echocardiography Used as a Novel Guiding Tool for Device Closure of Interatrial Communications

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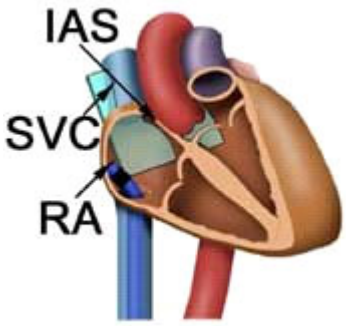
Background: This study sought to evaluate safety and radiation exposure when using intracardiac echocardiography (ICE) to guide transcatheter closure of interatial communications.
Methods: Fifty-two patients (29 male, 23 female, mean age 48±14 years) undergoing device closure of atrial septal defect (n=10) or patent foramen ovale (n=42) had the procedure guided by ICE. Therefore, an AcuNav-catheter was inserted via the inferior vena cava into the right atrium (Figure: IAS = interatrial septum; RA = right atrium; SVC = superior vena cava). All procedural stages were completely guided by ICE, including imaging of the interatrial communication during balloon sizing, device unfolding and release, and during the final check for adequate positioning.
Results: Especially the spatial relationship between device and cardiac structures (i.e. ascending aorta, interatrial septum and superior vena cava) was accurately demonstrated. No severe complications, including any related to ICE, were seen. Fluoroscopic time needed for the procedure including balloon sizing was 6,1±1,4 minutes. Neither sedation nor anesthesia were required.
Conclusions: ICE is a safe tool to guide device closure of interatrial communications. For the patient, procedural stress and radiation exposure are negligible. ICE can be considered the guiding tool of choice for device closure, particularly when long or repeated echocardiographic viewing is required.



1150-152 Utility of Intracardiac Echocardiography to Guide Radiofrequency Catheter Ablation of Ventricular Tachycardia of Different Etiologies

Monique R.M Jongbloed, Jeroen J. Bax, Philippine Kies, Alida E. Borger van der Burg, Katja Zeppenfeld, Ernst E. van der Wall, Martin J. Schalij, Leiden University Medical Center, Leiden, The Netherlands

Background: Ventricular tachycardia (VT) may originate from an anatomical substrate. Radiofrequency catheter ablation (RFCA) is a treatment option in a selected population of drug refractory VT patients (pts), but is associated with a risk of complications. Identification of anatomic abnormalities to predict the area of arrhythmogenicity and methods to monitor the occurrence of intra-procedural complications are mandatory.
Purpose: To assess the value of intracardiac echocardiography (ICE) to guide RFCA of VT: Identification of VT substrate, guiding of catheters and monitoring of potential complications.
Methods: Sixteen pts (13 men, mean age 55±18 yrs) with drug refractory hemodynamic stable VT were studied. VT was post-ischemic in 7 pts, secondary to arrhythmogenic right ventricular dysplasia (ARVD)/hypertrophic cardiomyopathy in 4 pts, and idiopathic in 5 pts. ICE was performed using a 10 F multi-frequency (5-10 Mhz) phased array transducer (Acunav, Siemens) positioned in the right ventricle. On initiation of all procedures, ventricular function and anatomy was investigated with ICE. VT mapping and ablation was performed using standard techniques including pace and entrainment mapping.
Results: Twenty-nine VTs were treated (cycle length 365±115 ms, 1.8 VT/pt). One pt did no undergo RFCA because of intracardiac thrombus, detected with ICE. Localized ventricular aneurysms were identified in 6 post-infarct pts and in 2 pts with ARVD. At these sites early-activated endocardial areas were identified during VT mapping. Catheter position and tip-tissue contact was monitored with ICE. Procedural success (non-inducibility of hemodynamically stable VT after RFCA) was achieved in 14 pts (88 %). Mean procedure time was 197±53 min and fluoroscopy time 30±15 min. Procedure related complications did not occur.
Conclusion: ICE is safe and feasible in guiding VT ablation procedures. ICE can be used to identify the VT-substrate, to ensure adequate tissue tip contact and to safely manoeuvre catheters within the ventricles.

POSTER SESSION

1151 Stress Echocardiography: New and Not So New

Tuesday, March 09, 2004, Noon-2:00 p.m.
Morial Convention Center, Hall G
Presentation Hour: 1:00 p.m.-2:00 p.m.

1151-141 Limitation of Stroke Volume During Dobutamine Stress by Left Ventricular Filling Time in Patients With Coronary Artery Disease

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Background: Stress-induced left ventricular (LV) dysfunction in patients with coronary artery disease (CAD) may be associated with significant changes in LV filling pattern, particularly filling time, that may limit maximum stroke volume (SV). We aimed to determine relative filling time compared to absolute diastolic filling time (diastolic time reserve) in normal subjects and in patients with CAD, and to ascertain the relationship between diastolic time reserve and changes in SV during pharmacological stress.
Methods: 69 subjects were studied during dobutamine stress; 33 were normal controls and 39 had CAD with normal LV systolic function (EDD 5.0±0.5cm, ESD 3.3±0.5cm). Relative filling time, expressed as a percentage of total diastole, was calculated by dividing LV filling time (LVFT) by total diastolic time (measured as the interval between aortic valve closure and mitral valve closure). Stroke volume (SV) was measured using Doppler echocardiography at the level of the LV outflow tract. All measurements were made at rest and repeated at peak stress.
Results: In normal controls, relative filling time increased with stress (from 85±3% to 92±2%, p<0.001), an increase of 7% that suggested the presence of diastolic time reserve. In these subjects, SV increased (from 69±17mls to 96±19mls, p<0.001). In CAD, relative filling time was not different from controls at rest, but decreased with stress (from 83±5% to 74±5%, p<0.001), representing a loss in diastolic time reserve of 9%. In these patients, SV failed to increase (rest: 76±20mls, stress: 74±16mls, p=ns). Stress-induced changes in diastolic time reserve correlated with changes in SV in patients with CAD (r=0.60, p<0.001), but not in controls (r=0.21, p=ns).
Conclusion: In patients with CAD, stress-induced ischemic dysfunction is associated with loss of diastolic filling reserve that determines stroke volume. This loss of early diastolic reserve may itself affect diastolic coronary artery filling, and consequently perpetuate myocardial perfusion instability.

1151-142 Can Symptomatic Sinus Deceleration During Dobutamine Stress Echocardiography Be Prevented?

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Background: Stimulation of parasympathetic activity that leads to reflex paradoxical sinus deceleration may occur during early stages of Dobutamine Stress Echocardiography (DSE) and may also prevent achievement of target heart rate. **Method:** We therefore studied 465 consecutive pts mean age (60 ± 2) who underwent DSE with two different protocols. Group A (A=265 pts) underwent a standard DSE protocol with incremental dose of Dobutamine (D) (10 to 50) at 3 minute interval and up to 1.2 mg Atropine (A) at 0.4 mg doses at 40 mg of D if needed. Group B (n=200) underwent same protocol except for early administration of 0.4 mg A at the beginning of 20 mg dose of D and dose has been repeated if needed. Sinus deceleration (SD) was defined reduction in heart rate >10 bpm lasting >3 minutes at 20 or higher rate of D. **Results:** Overall SD documented in 50 of 456 pts (42 for Group A, 8 in Group B). SD was more associated with females (62% vs. 38% p=0.02); older (63 ± 14 vs. 54 ± 7, p=0.01) and smaller BSA (1.6 ± 0.1 vs. 1.9 ± 0.2; p=0.02). SD was more frequent in higher EF (66 ± 4 vs. 56 ± 6; p=0.06). Sinus deceleration more common in Group A resulting more sub maximal testing. (Table) **Conclusion:** Older females with smaller BSA and with hyperdynamic left ventricular function are more susceptible to sinus deceleration during Dobutamine Stress Echocardiography. Early administration of Atropine can effectively prevent sinus deceleration and help to reach maximal heart rate.